Application Number 10/617,627
Responsive to Office Action mailed February 15, 2006

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended):   A method ~~of detecting errors in transferred data~~ comprising steps of:

~~receiving transferred data having an error detection code with a first symbol size and an error correction code having a second symbol size different from the first symbol size appended to user data;~~

calculating a transformed error detection code syndrome <u>and a recomputed transformed error detection code syndrome from data having an error detection code appended to user data</u>;

~~calculating a recomputed error detection code syndrome;~~

comparing the recomputed transformed error detection code syndrome to the transformed error detection code syndrome; and

if the recomputed transformed error detection code syndrome corresponds to the transformed error detection code syndrome, transferring the data ~~to a host~~.

Claim 2 (Original):   The method of claim 1 further comprising steps of:

if the recomputed transformed error detection code syndrome does not correspond to the transformed error detection code syndrome, receiving the data again.

Claim 3 (Original):   The method of claim 1, wherein the transformed error detection code syndrome recomputation step comprises steps of:

computing a correction pattern using a Chien search in conjunction with Forney's algorithm.

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Claim 4 (Original): The method of claim 1, wherein the transformed error detection code syndrome calculating step comprises steps of:

generating an error detection code multiplier;

generating a non-transformed error detection code syndrome; and

multiplying the error detection code multiplier by the non-transformed error detection code syndrome.

Claim 5 (New): The method of claim 1, wherein the error detection code includes a first portion with a first symbol size and a second portion with a second symbol size, wherein the second symbol size is different from the first symbol size.

Claim 6 (Original): The method of claim 1 wherein the step of calculating a recomputed transformed error detection code syndrome is performed only if the transformed EDC syndrome is nonzero.

Claim 7 (Original): The method of claim 6 wherein if the transformed EDC syndrome is zero, then the transmitted data is transmitted to the host.

Claim 8 (Original): A method of detecting an error in error correction code (ECC) interleave encoded data comprising steps of:

receiving ECC interleave encoded data;

transforming the data in a transformed error detection code (EDC) syndrome generator into a transformed error detection code syndrome;

receiving the ECC interleave encoded data in a recomputed transformed error detection syndrome generator;

generating a recomputed transformed error detection syndrome associated with a computed correction pattern in the ECC interleave encoded data; and

comparing the transformed EDC syndrome with the recomputed transformed error detection syndrome.

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Claim 9 (Original): The method of claim 8 further comprising a step of:

locating errors either in the received data using an error locator; and

correcting errors in the received data using an error evaluator.

Claim 10 (Original): The method of claim 9 wherein the locating step comprises performing a Chien search using the received data and the evaluating step comprises performing Forney's algorithm.

Claim 11 (Original): The method of claim 8, wherein the transforming step comprises:

generating a non-transformed EDC syndrome;

computing an EDC multiplier; and

multiplying the non-transformed EDC syndrome by the EDC multiplier to generate the transformed EDC syndrome.

Claim 12 (Original): The method of claim 11, wherein the step of generating a non-transformed EDC syndrome generator comprises:

receiving the data;

providing clocked flip-flops;

multiplying an output of the flip-flops with a value associated with the error detection code in the received data; and

logically adding the multiplied output to the received data.

Claim 13 (Original): The method of claim 8 further comprising steps of:

generating an error correction code (ECC) syndrome from the received data in an ECC syndrome generator.

Claim 14 (Original): The method of claim 13 wherein the ECC syndrome generator is connected to a comparator through an error correction unit.

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Claim 15 (Original):   The method of claim 14 wherein the error correction unit is connected to the comparator through an EDC syndrome recomparator.

Claim 16 (Original):   A method for encoding data with an error correction code and error detection code comprising:

      generating an error correction code for data using a first symbol size; and

      generating an error detection code for the data using a second symbol size different from the first symbol size.

Claim 17 (Original):   The method according to claim 16 wherein the first symbol size is h-bits and the second symbol size (g-bits) is twice the first symbol size.

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